

## ABSTRACT

*According to the World Bank, Citarum River has been named as the dirtiest river in the world because the water quality of Citarum River is far from feasible, the quality of the Citarum river water currently has an unpleasant odor and black water color because of it has been contaminated with chemicals disposing without prior filtering process which directly discharged into the Citarum river.*

*Real-time testing of Citarum water quality is needed, using sensors in the market so that can be easily duplicated such as turbidity sensors, air turbidity sensors, temperature sensors, and PH (Power of Hydrogen) sensors to determine whether Citarum water is acidic or basic, this method makes it easier for researchers to monitor Citarum water quality, because it does not need to take water samples and then brought it to the laboratory, thus it's efficient in time and energy.*

*In this study obtained very good results, because the level of accuracy that has met the sensor datasheet that is used, so that the resulting value can be used as a reference, the use of moving averages and Kalman filters, is very efficient because it can increase the precision of the sensor output value, thereby minimizing the surge in values the sensor.*

*Key Words: Filtration, Real Time, Sensor, Power of Hydrogen, Parameter, Error*